TITLE : THE EFFECT OF MATERNAL OBESITY ON FETAL IRON TRANSFER

INTRODUCTION: WHO defines obesity or overweight as abnormal fat accumulation that presents a risk to life. According to National survey of family health report overall prevalence of overweight among women of 20-44 years was 24.4%and 23% were obese.

BACKGROUND OF STUDY : According to primary literature, obesity increases inflammatory mediator CRP and hepcidin. Hepcidin binds to ferroportin and inactivates it and prevents the iron transfer to the fetus. Decreased iron transfer may result in neurodevelopmental impairment to the fetus.

AIM OF THE STUDY

- To demonstrate the effect of maternal obesity and fetal iron transfer by taking normal pregnant women in three groups based on their BMI.
- To correlate the effect of inflammatory mediators in early pregnancy on cord blood iron status.

- To sensitize the women to reduce their weight before contemplating the next pregnancy.

MATERIALS AND METHODS: In first trimester during first visit after confirmation of pregnancy, the pregnant women are divided into three groups based on BMI after obtaining their consent.

Group 1 : Normal pregnant women with BMI (18-24.9kg/sq.m)

Group 2 : Overweight pregnant women with BMI (25-29.9kg/sq.m)

Group 3 : Obese pregnant women with BMI (>30kg/sq.m)

Sample size : 90(30 pregnant women in each group)

Study period : June 2013-May 2014. (12 Months)

Study design : Prospective Cross Sectional Cohort Study

These pregnant women were followed throughout the pregnancy to look for any complications inherent to pregnancy which would be recorded and they were excluded from the study. They were followed throughout the pregnancy. In second trimester, maternal CRP investigation was done.

At the time of delivery the cord blood was collected and it is subjected for cord blood iron profile which includes serum iron, transferrin saturation and serum ferritin and cord blood CRP.

PRIMARY OUTCOME: The relationship between maternal obesity and cord blood iron profile.

SECONDARY OUTCOME: To correlate the effect of inflammatory mediators like CRP in early pregnancy on fetal iron transfer.

KEY WORDS : Body mass index (BMI), C Reactive Protein, Cord blood iron profile.